SPECO 960H series

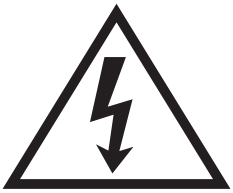
Intensifier H® Indoor/Outdoor Wedge Camera

HINT81H

960H INT H

speco technologies®

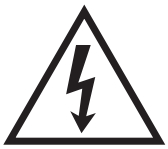
Installation and Operation Manual



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION! TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Explanation of two Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance-(servicing) instructions in the literature accompanying the appliance.

THE GRAPHIC SYMBOLS WITH SUPPLEMENTAL MARKING ARE ON THE BOTTOM OF THE SYSTEM.

"WARNING-TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE"

Regulatory Notice

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

WARNING Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION When this camera is installed near equipment, like a wireless communication device that emits a strong electromagnetic field, some irregularity such as noise on the monitor screen may happen.

- *This installation should be made by a qualified service person and should abide to all local codes.*

Contents

1.	**Important Safety Instructions**	**6**
2.	**Features**	**7**
3.	**Composition**	**8**
3.1.	Parts	8
4.	**Installation**	**9**
4.1.	Connection	9
4.1.1.	Make the connections	9
4.2.	Camera mounting	9
5.	**Name and Functions**	**10**
5.1.	Camera controls	10
5.1.1.	Menu navigation	10
5.1.2.	Monitoring and switches	
6.	**Operating Camera**	**11**
6.1.	Camera OSD menu	11
6.2.	PRESET	14
6.3.	EXPOSURE	14
6.3.1.	LENS (DC or ESC)	14
6.3.2.	BRIGHTNESS – Adjusts brightness of the image.	14
6.3.3.	SHUTTER – Adjusts the shutter speed.	14
6.3.4.	FLK (FLICKERLESS)	15
6.3.5.	AGC (Auto Gain Control)	15
6.3.6.	INTENSIFY	15
6.4.	WHITE BAL. – White Balance Setup	15
6.4.1.	ATW	15
6.4.2.	PUSH	15
6.4.3.	MANUAL	15
6.5.	DAY / NIGHT	16
6.5.1.	AUTO	16
6.5.2.	DAY – For color mode only.	16
6.5.3.	NIGHT – For BLACK and WHITE mode only.	17
6.5.4.	EXTERN	17
6.5.5.	IRED	18
6.6.	BACKLIGHT	18
6.6.1.	BLC (back-light compensation), HLC (high-light compensation)	18
6.6.1.1.	OFF – Disable	18
6.6.1.2.	BLC – To lighten a darker part of the image.	18

6.6.1.3. HLC – Force blocking the bright part. 19
6.6.2. D-WDR (Digital Wide Dynamic Range), DEFOG 20
6.6.2.1. OFF – Disable 20
6.6.2.2. D-WDR 20
6.6.2.3. DEFOG 20
6.7. SPECO DNR – Digital Noise Reduction 20
6.8. IMAGE 21
6.8.1. SHARPNESS – To adjust SHARPNESS of the image. 21
6.8.2. CHROMA – To adjust the color intensity of the image. 21
6.8.3. MONITOR 21
6.8.4. SHADING 21
6.8.5. H-MIRROR – Horizontal image flip 21
6.8.6. POSI/ NEGA – Invert the colors of the images 21
6.8.7. MOTION – Motion detect 22
6.8.7.1. OFF – Disable 22
6.8.7.2. ON 22
6.8.8. PRIVACY 23
6.8.8.1. OFF – Disable 23
6.8.8.2. ON 23
6.9. SYSTEM 24
6.9.1. OSD – On Screen Display 24
6.9.1.1. CAM TITLE 24
6.9.1.2. ID DISPLAY 24
6.9.1.3. FONT COLOR 24
6.9.2. CAM ID – CAMERA ID (RS-485 Communication ID) 25
6.9.3. SYNC 25
6.9.4. BAUDRATE 25
6.9.5. COAXIAL 25
6.9.6. DEFECT (Pixel defect compensation) 25
6.9.7. LANGUAGE 25
6.9.8. VERSION – Camera Software History .. 25
6.10. EXIT 26
6.10.1. SAVE 26
6.10.2. PRESET – In the state of the EXIT, press menu button exit. 26

7. Troubleshooting 27
7.1. Resolving problems 27

8. Technical Data 28
8.1. Specifications – HINT81H 28
8.2. Dimensions 29

1. Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with a dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install unit near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
9. Only use attachments/accessories specified by the manufacturer.
10. Unplug this apparatus during lightning storms or when unused for long periods of time.
11. Refer all servicing to service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
12. Do not install the camera in extreme temperature conditions. Operate the camera under conditions where temperatures are within -10°C(14°F) to +50°C(122°F). Especially be careful for ventilation under high temperature.

2. Features

1/3 inch High Sensitivity CCD

Min Illumination (F1.2, 30IRE, ICR B/W)
Works under extreme low illumination conditions:

– INTENSIFIER [X32] : Color 0.005 Lux

D-WDR (Digital Wide Dynamic Range)
Greatly improves image quality and detail even in backlight conditions, by increasing exposure in dark areas while decreasing it in bright areas, resulting in a corrected image with clear details in both bright and dark areas.

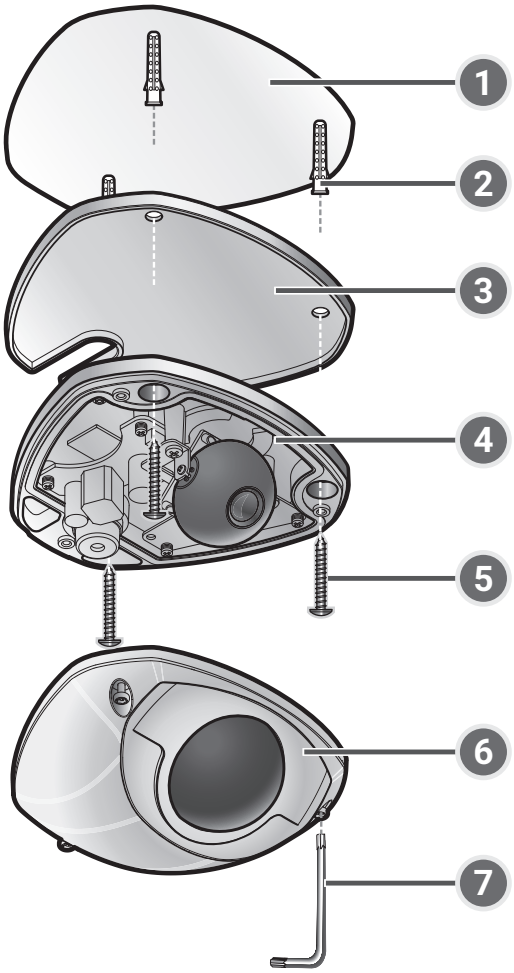
Variety of convenience functions
Provides special functions for advanced manipulation of your device, including:

– Adjustable sharpness enhancement [700 TV Lines]
– Adjustable privacy mask [8 masks]
– Adjustable motion detection [4 areas]
– SPECO DNR [Digital Noise Reduction]
– INTENSIFIER [X32]
– BLC [Backlight Compensation]
– POSI / NEGA
– MIRROR [Horizontal]
– Coaxial communication [Pelco-C]

3. Composition

3. 1. Parts

The camera unit consists of the following parts:



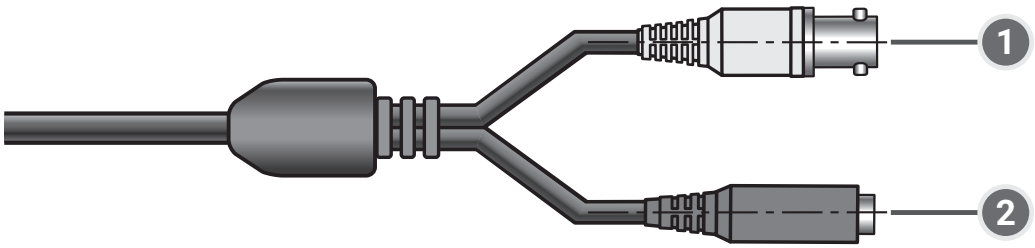
No.	Parts
1	Guide pattern
2	Plastic anchors
3	Rubber pad
4	Dome base
5	Mounting screws
6	Dome cover
7	L-wrench for dome cover mounting

- **CAUTION:** Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.

4. Installation

4. 1. Connection

Connecting to Power and Video



4.1.1. Make the connections

- The wire is non-polarized.
- Use 24V AC power source or 12V DC power source.

No.	Function	Terminal Color	Remarks
1	Video Output	Yellow	1.0 Vp-p
2	Power Input	Red	24V AC (±20%) / 12V DC (±10%)

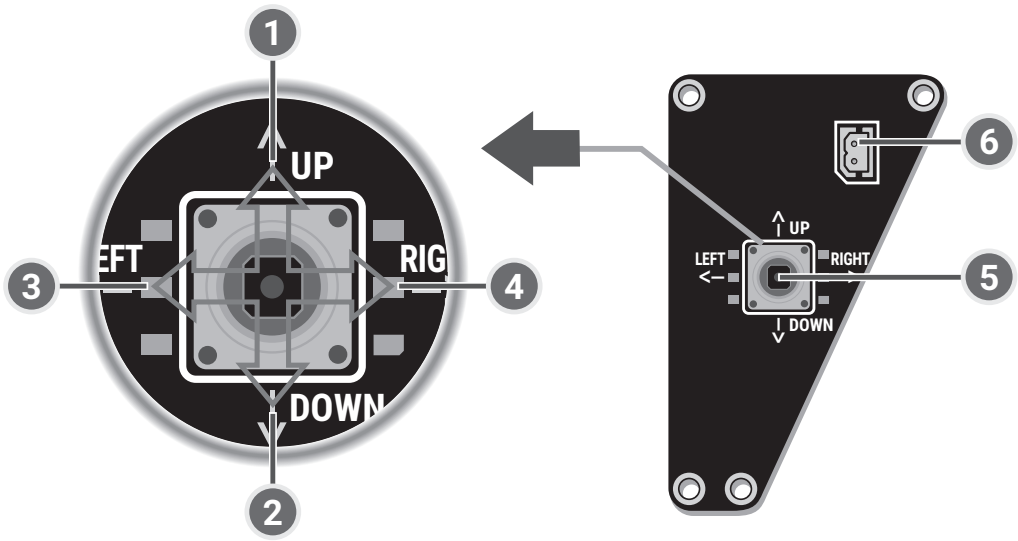
4. 2. Camera mounting

To mount the camera:

- Stick the guide pattern on the wall or ceiling.
- Drill three holes according to the guide pattern then insert anchors into the drilled holes
- Draw out power / video wires to the connecting places.
- Attach the camera base to the ceiling or wall using the supplied three screws.
- Adjust desired focus and scene by turning and moving bracket by hand.
- Align dome cover over base.
- Fix the dome cover on the base by covering.

5. Name and Functions

5. 1. Camera controls



5.1.1. Menu navigation

No.	Parts	Remarks
1	**Up**	Move the cursor up in the screen.
2	**Down**	Move the cursor down in the screen.
3	**Left**	Move the cursor left in the screen.
4	**Right**	Move the cursor right in the screen.
5	**Menu(Center)**	Press straight down to open menu or set.

5.1.2. Monitoring and switches

No.	Parts	Remarks
6	**Service monitor connector**	When installing the camera, connect a service monitor to set angle of view and focus of the screen. (This output cannot be used simultaneously with the main video output.)

- **NOTE:** Push the Joy stick for one second, and the OSD appears on the screen. Move the Joy Stick up, down, left & right to control the OSD functions.

6. Operating Camera

6. 1. Camera OSD menu

SPECO TECH				
PRESET	INDOOR, OUTDOOR, LOW LIGHT, HALLWAY, LOBBY(D-WDR), ELEVATOR			
MAIN SETUP	EXPOSURE	ESC ↵	LENS	ESC
			BRIGHTNESS	0 ~ 20
			SHUTTER	AUTO, 1/60, 1/120, 1/250, 1/500, 1/700, 1/1K, 1/1600, 1/2500, 1/5K, 1/7K, 1/10K, 1/30K, 1/60K, 1/120K
			FLK	OFF, ON
			AGC	0 ~ 20
			INTENSIFY	OFF, X2, X4, X8, X16, X32, X64, X128, X256, X512
			RETURN	↵
		DC ↵	LENS	DC
			BRIGHTNESS	0 ~ 20
			SHUTTER	1/60, 1/120, 1/250, 1/500, 1/700, 1/1K, 1/1600, 1/2500, 1/5K, 1/7K, 1/10K, 1/30K, 1/60K, 1/120K
			FLK	OFF, ON
			AGC	0 ~ 20
			INTENSIFY	OFF, X2, X4, X8, X16, X32, X64, X128, X256, X512
			RETURN	↵
	WHITE BAL.	ATW		
		PUSH ↵	PUSHING	
		MANUAL ↵	RED	0 ~ 20
			BLUE	0 ~ 20
			RETURN	↵
	DAY/NIGHT	AUTO ↵	MODE	AUTO
			D/N LEVEL	LOW, MIDDLE, HIGH
			DELAY TIME	0 ~ 15 SEC
			BURST	OFF, ON
			RETURN	↵
		DAY	MODE	DAY
			RETURN	↵
		NIGHT ↵	MODE	NIGHT
			BURST	OFF, ON
			RETURN	↵
		EXTERN	MODE	EXTERN
			EXTERN	EXT-L, EXT-H
			DELAY TIME	0 ~ 15 SEC
			BURST	OFF, ON
			RETURN	↵

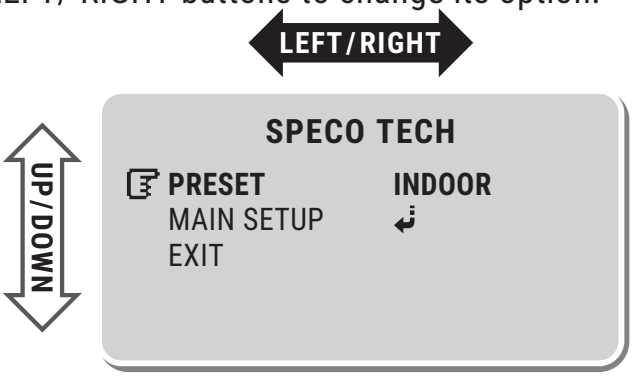
MAIN SETUP	**DAY/NIGHT**	IRED	MODE	IRED	
			DELAY TIME	0 ~ 15 SEC	
			BURST	OFF, ON	
			IR RED	INTELLI., SMART	
			LEVEL	NOT USED (INTELLI.), OFF, 1 ~ 20 (SMART)	
			AREA	NOT USED (INTELLI.), 0 ~ 20 (SMART)	
			RETURN	↵	
	BACKLIGHT↵	BLC / HLC	OFF		
			BLC ↵	MODE	BLC
				LEVEL	LOW, MIDDLE, HIGH
				DISPLAY	OFF, ON
				TOP	0 ~ 45 (NTSC)
				BOTTOM	10 ~ 55 (NTSC)
				LEFT	0 ~ 208 (NTSC)
				RIGHT	10 ~ 218 (NTSC)
				RETURN	↵
			HLC ↵	LEVEL	LOW, MIDDLE, HIGH
				RETURN	↵
		D-WDR / DEFOG	OFF		
			D-WDR ↵	MODE	D-WDR
				LEVEL	LOW, MIDDLE, HIGH
				RETURN	↵
			DEFOG ↵	MODE	DEFOG
				LEVEL	LOW, MIDDLE, HIGH
				RETURN	↵
	SPECO DNR	OFF, LOW, MIDDLE, HIGH			
	IMAGE	SHARPNESS	0 ~ 20		
		CHROMA	0 ~ 20		
		MONITOR↵	GAMMA	0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70	
			PED. LV.	0 ~ 20	
			RETURN	↵	
		SHADING	0 ~ 20		
		H-MIRROR	OFF, ON		
		POSI/NEGA	POSI, NEGA		

MAIN SETUP	IMAGE	MOTION	OFF		
			ON ↵	AREA	1 ~ 4
				DISPLAY	OFF, ON
				SENSITIVITY	0 ~ 30
				TOP	0 ~ 54 (NTSC)
				BOTTOM	1 ~ 55 (NTSC)
				LEFT	0 ~ 217 (NTSC)
				RIGHT	1 ~ 218 (NTSC)
				RETURN	↵
		PRIVACY	OFF		
			ON ↵	AREA	1 ~ 8
				DISPLAY	OFF, ON
				COLOR	BLACK, GRAY-1, GRAY-2, GRAY-3. GRAY-4, WHITE, YELLOW, GREEN, BLUE, RED, CYAN, MAGENTA
				TOP	0 ~ 61 (NTSC)
				BOTTOM	1 ~ 62 (NTSC)
				LEFT	0 ~ 238 (NTSC)
				RIGHT	1 ~ 239 (NTSC)
				RETURN	↵
	SYSTEM ↵	OSD ↵	CAM TITLE	CHAR SELECT	↑ ,↓
				POSITION	← ,→
				RETURN	ENTER
			ID DISPLAY	OFF, ON	
			FONT COLOR	1 ~ 8	
			RETURN	↵	
		CAM ID	0 ~ 255		
		SYNC	INT		
		BAUDRATE	2400, 4800, 9600, 57600, 115200		
		COAXIAL	15 BIT		
		DEFECT	START ↵		
		LANGUAGE	ENGLISH, KOREAN, JAPANESE, CHINESE1, CHINESE2, SPANISH, GERMAN, FRENCH, POLISH, ITALIAN, PORTUGUESE, CZECH, RUSSIAN, TURKISH, HUNGARIAN, GREEK		
		VERSION			
		RETURN	↵		

EXIT	.
	PRESET

Using the On-Screen Display(OSD) Menu

- To access an OSD setup menu item, simply press the MENU button to display the menu screen as shown below. Use UP and DOWN buttons to move the cursor to a desired menu item and user LEFT/ RIGHT buttons to change its option.



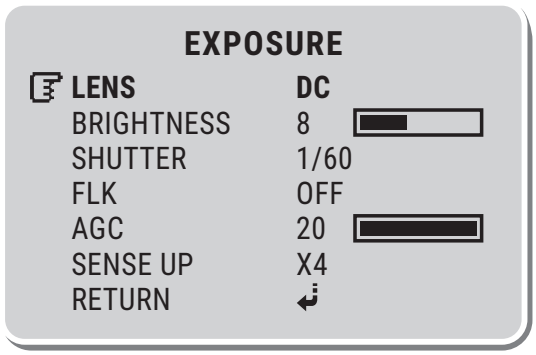
6. 2. PRESET

This menu can be set according to the surroundingenvironment. It is consists of **INDOOR**, **OUTDOOR**, **LOW LIGHT**, **HALLWAY**, **LOBBY(D-WDR)** and **ELEVATOR**.

6. 3. EXPOSURE

6.3.1. LENS (DC or ESC)

Select **LENS** using the the UP or DOWN button. It is possible to adjust **ESC**, **DC** using the LEFT or RIGHT button. Select DC and Press the MENU button. DC Lens is activated.



6.3.2. BRIGHTNESS – Adjusts brightness of the image.

It is possible to adjust it within **0 ~ 20** using the LEFT or RIGHT button.

6.3.3. SHUTTER – Adjusts the shutter speed.

It is possible to adjust **AUTO**, **1/60**, **1/120**, **1/250**, **1/700**, **1/1K**, **1/1600**, **1/2500**, **1/5K**, **1/7K**, **1/10K**, **1/30K**, **1/60K**, **1/120K** level using the LEFT or RIGHT button.

If **ESC** is selected, the **AUTO** is automatically controlled depending on the ambient illumination of the subject.

- **DC:** 1/60 SEC Default
- **ESC:** AUTO Default
- **NTSC SHUTTER AUTO:** 1/60 ~ 120,000

6.3.4. FLK (FLICKERLESS)

Select this when you experience picture flicker, this happens when there is a clash with the installed lighting frequency.

➲ **ON: Hold shutter speed** (NTSC: 1/100)

6.3.5. AGC (Auto Gain Control)

It is possible to adjust it within **0 ~ 20** using the LEFT or RIGHT button. When the Low illumination: The higher the gain level, the brighter the picture but the higher the noise.

6.3.6. INTENSIFY

It is possible to adjust with in **OFF**, **X2**, **X4**, **X8**, **X16**, **X32**, **X64**, **X128**, **X256**, **X512** using the LEFT or RIGHT button. When low light is used to increase the sensitivity.

6. 4. WHITE BAL. – White Balance Setup

- Select **WHITE BAL.** using the UP and DOWN buttons and then press MENU to enter the exposure setup.
- You can setup **ATW**, **PUSH** and **MANUAL**.
- Select desired submenu using the UP and DOWN buttons and use LEFT and RIGHT buttons to set the option.

6.4.1. ATW

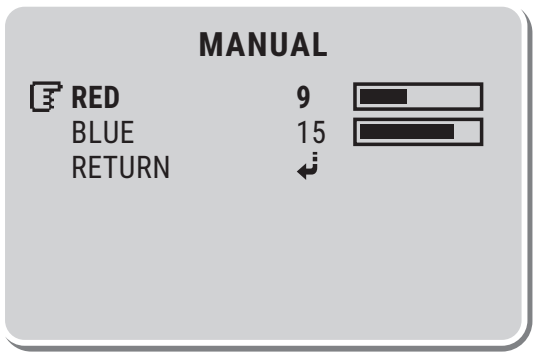
When the Color temperature is automatically adjusted to 2,000°K to 11,000°K.

6.4.2. PUSH

If the set color temperature doesn't meet the image.
Press the MENU button to fix color temperature to specific image.
If the environment changes, readjust it.

6.4.3. MANUAL

To set a certain color temperature with **RED**, **BLUE**.
Select **MANUAL** using the LEFT or RIGHT button and press the MEUN button then W.B. MANUAL is activated.



➲ **RED**
To adjust density of **RED**. (0 ~ 20)

➲ **BLUE**
To adjust density of **BLUE**. (0 ~ 20)

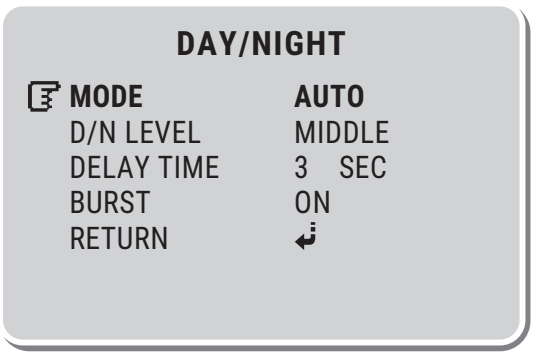
6. 5. DAY / NIGHT

- You can set the day and night switching mode.
- Select **DAY/NIGHT** using the UP and DOWN buttons, and then press MENU to enter the **DAY/NIGHT** setup.
- Available options are **AUTO**, **DAY**, **NIGHT**, **EXTERN** and **IRED**.

6.5.1. AUTO – To switch to COLOR/BLACK and WHITE automatically upon illumination.

Select **AUTO** using the LEFT or RIGHT button and press the MENU button to activate **DAY/NIGHT** option. Color in a normal environment, but changes to B/W when the low illumination.

- **AGC** settings, if less than 10 D/N switching the hunting may occur.
- In Auto Mode D/N camera using external IR may cause D/N filter to flicker.



➲ **MODE**
You can select between **AUTO** using the LEFT or RIGHT button.

➲ **D/N LEVEL (switching level from color to black and white)**
Select **D/N LEVEL** using the UP or DOWN button.
You can adjust between **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.

➲ **DELAY TIME (Day/Night switching delay time)**
You can adjust between **0 ~ 15** sec changing the color or B/W.

➲ **BURST**
You can select between **ON/OFF** using the LEFT or RIGHT button.

- Set to **OFF**, **BURST** signal disappears in the B/W state.

6.5.2. DAY – For color mode only.

The picture is always displayed in color.

6.5.3. NIGHT – For BLACK and WHITE mode only.

Select B/W using the LEFT or RIGHT button and press the MEUN button to activate **DAY/NIGHT** option.

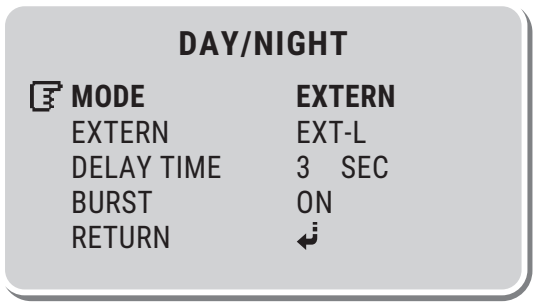
➲ **MODE**
You can select **NIGHT** using the LEFT or RIGHT button.

➲ **BURST**
You can select between **ON/OFF** using the LEFT or RIGHT button.

• Set to **OFF, BURST** signal disappears in the B/W state.

6.5.4. EXTERN

To switch between COLOR or BLACK and WHITE depending on external signals. Select **EXT-L** or **EXT-H** using the LEFT or RIGHT button and press the MEUN button to activate **DAY/NIGHT** option.



➲ **MODE**
You can select **EXTERN** using the LEFT or RIGHT button.

➲ **EXTERN**
You can adjust **EXT** signal Low color or **EXT** signal High color using the LEFT or RIGHT button.

EXT signal	EXT-L	EXT-H
+3.3V	NIGHT	DAY
GND(0V) or open	DAY	NIGHT

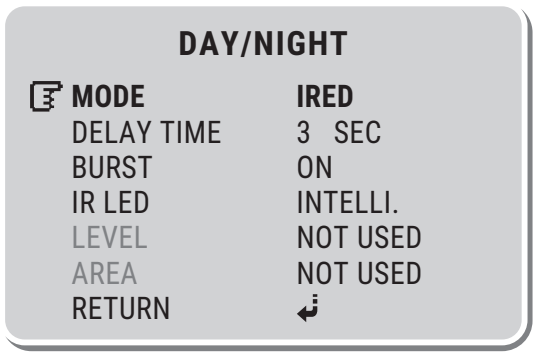
➲ **DELAY TIME (Day/Night switching delay time)**
You can adjust between **0 ~ 15** sec changing the color or B/W.

➲ **BURST**
You can select between **ON/OFF** using the LEFT or RIGHT button.

• Set to **OFF, BURST** signal disappears in the B/W state.

6.5.5. IRED

To switch between COLOR or BLACK and WHITE depending on Photo sensor or AGC data. Select **IRED** using the LEFT or RIGHT button and press the MEUN button to activate **DAY/NIGHT** option.



➲ **MODE**
You can select **IRED** using the LEFT or RIGHT button.

➲ **DELAY TIME (day/night switching delay time)**
You can adjust between **0 ~ 15** sec changing the color or B/W.

➲ **BURST**
You can select between **ON/OFF** using the LEFT or RIGHT button.

• Set to **OFF**, **BURST** signal disappears in the B/W state.

➲ **IR LED (INTELLI./ SMART)**
- You can select between **INTELLI.** or **SMART** using the LEFT or RIGHT button.
- When set to **SMART**, you can adjust the level and area.
- When set to **INTELLI.**, **IR LED** brightness is automatically adjusted according to the distance to the subject.

➲ **LEVEL**
Adjust picture brightness of the IR function: When IR LED ON state.

➲ **AREA**
Adjust picture area of the IR function: When IR LED ON state.

6. 6. BACKLIGHT

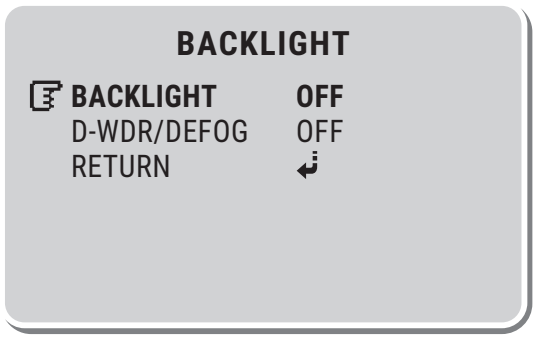
- It is possible to adjust **OFF**, **BLC**, **HLC** using the LEFT or RIGHT button.
- It is possible to adjust **OFF**, **D-WDR**, **DEFOG** using the LEFT or RIGHT button.

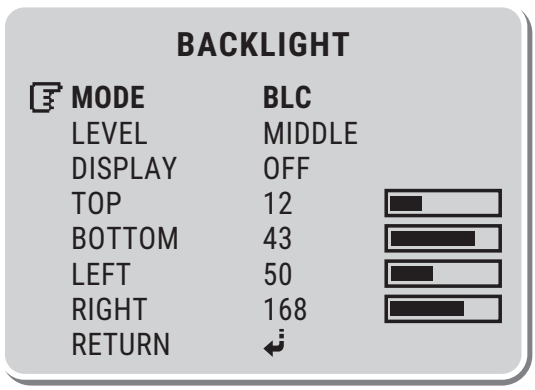
6.6.1. BLC (back-light compensation), HLC (high-light compensation)

6.6.1.1. OFF – Disable

6.6.1.2. BLC – To lighten a darker part of the image.

Select **BLC** using the the LEFT or RIGHT button and press the MEUN button to activate **BACKLIGHT** option.

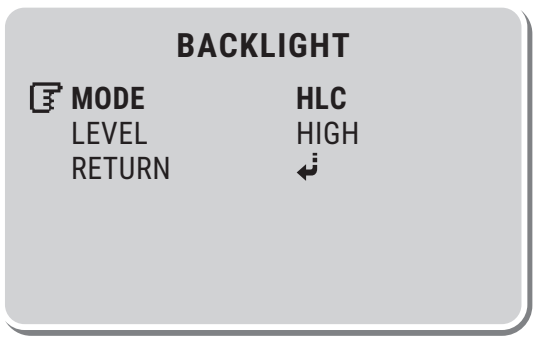




- **MODE:** Select **MODE** using the UP or DOWN button. You can select between **OFF**, **BLC**, **HLC** using the LEFT or RIGHT button.
- **LEVEL (Adjust level of the BLC function):** You can select between **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.
- **DISPLAY:** You can see the **BLC AREA** using the LEFT or RIGHT button.
- **TOP/ BOTTOM/ LEFT/ RIGHT (Users can specify BLC area.):** Select **TOP**, **BOTTOM**, **LEFT** or RIGHT using the UP or DOWN button. You can select the **AREA** display using the LEFT or RIGHT button.

6.6.1.3. HLC – Force blocking the bright part.

Select **HLC** using the the LEFT or RIGHT button and press the MEUN button to activate **BACKLIGHT** option.



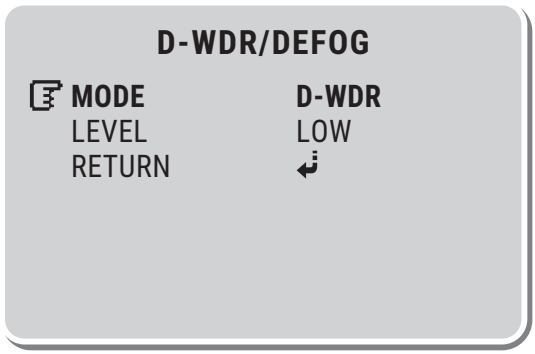
- **MODE:** You can select **HLC** using the LEFT or RIGHT button.
- **LEVEL (Set the level of bright part):** You can select between **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.

6.6.2. D-WDR (Digital Wide Dynamic Range), DEFOG

6.6.2.1. OFF – Disable

6.6.2.2. D-WDR

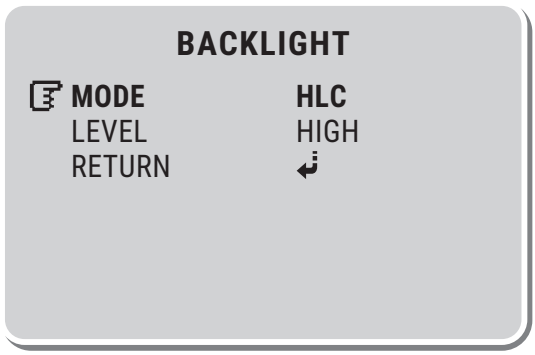
Select **D-WDR** using the the LEFT or RIGHT button and press the MENU button. When there are both bright and dark areas at the same time, this mode makes both areas distinctive.



- **MODE:** Select **MODE** using the UP or DOWN button. You can select between **OFF**, **D-WDR**, **DEFOG** using the LEFT or RIGHT button.
- **LEVEL (Adjust level of the D-WDR function):** You can select between **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.

6.6.2.3. DEFOG

Sharpening to look around, if you look blurred due to fog around.



- **MODE:** You can select **DEFOG** using the LEFT or RIGHT button.
- **LEVEL (Adjust level of the DEFOG function):** You can select between **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.

6. 7. SPECO DNR – Digital Noise Reduction

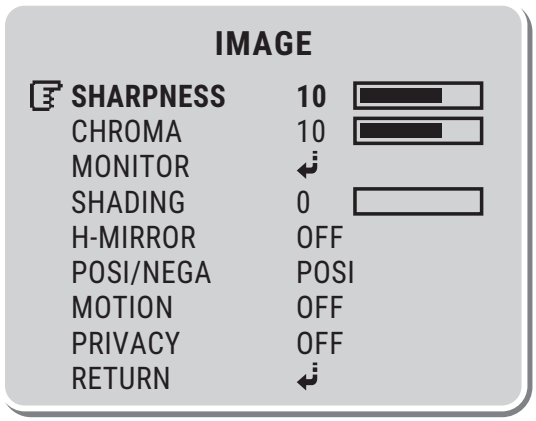
- To reduce the image noise especially during the low ambient lighting conditions.
- You can adjust between **OFF**, **LOW**, **MIDDLE**, **HIGH** using the LEFT or RIGHT button.

6. 8. IMAGE

– Select **IMAGE** using the UP or DOWN button and press the MENU button to activate **IMAGE** option.

6.8.1. SHARPNESS – To adjust SHARPNESS of the image.

You can adjust the sharpness from **0 ~ 20** using the LEFT or RIGHT button.



6.8.2. CHROMA – To adjust the color intensity of the image.

You can adjust the gain from **0 ~ 20** using the LEFT or RIGHT button.

6.8.3. MONITOR

Please change the settings value of video appropriate to your monitor.

➲ **GAMMA**

When you use **CRT** or **LCD** monitor, you can select **GAMMA** level. You can select between **0.35**, **0.40**, **0.45**, **0.50**, **0.55**, **0.60**, **0.65**, **0.70** using the LEFT or RIGHT button.

➲ **PED. LV.**

You can adjust setup level from **0 ~ 20** using the LEFT or RIGHT button.

6.8.4. SHADING

Compensate for the dark parts of the image outside the Department. You can adjust **SHADING** from **0 ~ 20** using the LEFT or RIGHT button.

6.8.5. H-MIRROR – Horizontal image flip

You can select from **ON**, **OFF** using the LEFT or RIGHT button.

➲ **ON:** Horizontal image flip.

6.8.6. POSI/ NEGA – Invert the colors of the images

➲ **POSI:** Default

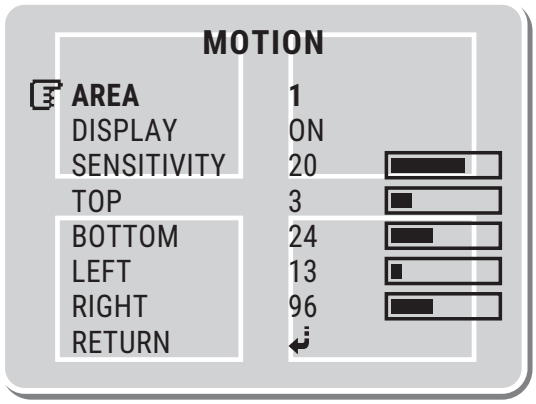
➲ **NEGA:** Invert the colors of the images.

6.8.7. MOTION – Motion detect

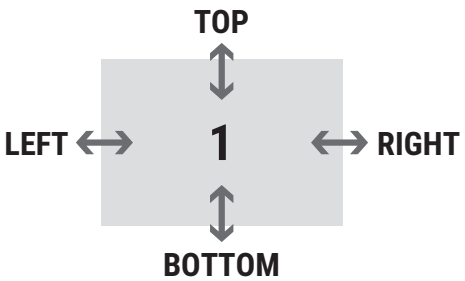
Press the MENU button to activate **MOTION** option.

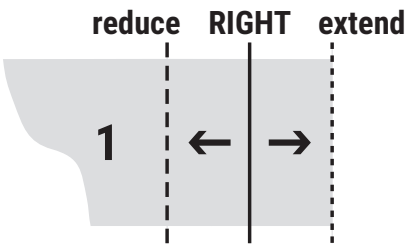
6.8.7.1. OFF – Disable

6.8.7.2. ON



- **AREA:** To specify **MOTION** detection area.
  You can select from area **1 ~ 4** position using the LEFT or RIGHT button.
- **DISPLAY:** You can see the **MOTION** area using the LEFT or RIGHT button.
  ON If the motion action **MOTION** character on the screen is on the display.
  OFF Disable
- **SENSITIVITY:** To setup the motion sensitivity.
  You can adjust the motion sensitivity of a movement from **0 ~ 30** using the LEFT or RIGHT button.
  0 Least sensitive (lowest)
  30 Most sensitive (highest)
- **TOP/ BOTTOM/ LEFT/ RIGHT:** Users can specify **MOTION** detected area.
  Select **TOP**, **BOTTOM**, **LEFT** or **RIGHT** using the UP or DOWN button.
  You can adjust the AREA using the LEFT or RIGHT button.
  TOP Extend or reduce the upper area of the **MOTION** detected area.
  BOTTOM Extend or reduce the bottom area of the **MOTION** detected area.
  LEFT Extend or reduce the left side of the **MOTION** detected area.
  RIGHT Extend or reduce the right side of the **MOTION** detected area.





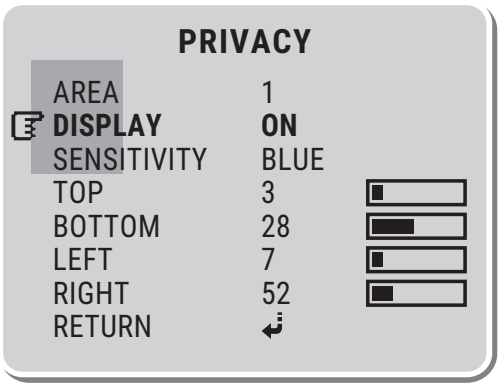
- **NOTE:** In each area activated only when **DISPLAY** item is **ON**.

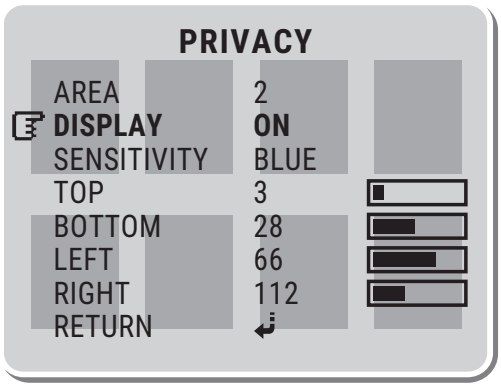
6.8.8. PRIVACY

Select **PRIVACY** using the UP or DOWN button and select **ON** using the LEFT or RIGHT button.
Press the MENU button to activate **PRIVACY** option.

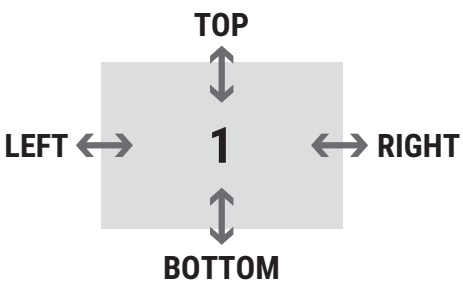
6.8.8.1. OFF – Disable

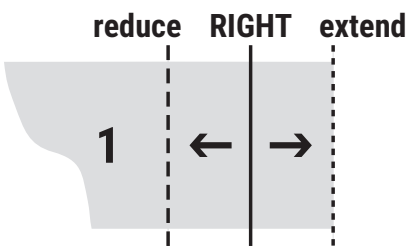
6.8.8.2. ON





- **AREA:** To specify the **PRIVACY** area.
  You can select from area **1 ~ 8** position using the LEFT or RIGHT button.
- **DISPLAY:** You can select **AREA** between **ON**, **OFF** using the LEFT or RIGHT button.
  ON Display the Privacy area.
  OFF Disable
- **COLOR:** To select the color of **PRIVACY** masks.
  You can select the color of all areas from **BLACK**, **GRAY-1 ~ 4**, **WHITE**, **YELLOW**, **GREEN**, **BLUE**, **RED**, **CYAN**, **MAGENTA** using the LEFT or RIGHT button.
- **TOP/ BOTTOM/ LEFT/ RIGHT:** Users can specify **PRIVACY** area.
  Select **TOP**, **BOTTOM**, **LEFT** or **RIGHT** using the UP or DOWN button.
  You can adjust the privacy zone using the LEFT or RIGHT button.
  TOP Extend or reduce the upper area of the **PRIVACY** detected area.
  BOTTOM Extend or reduce the bottom area of the **PRIVACY** detected area.
  LEFT Extend or reduce the left side of the **PRIVACY** detected area.
  RIGHT Extend or reduce the right side of the **PRIVACY** detected area.



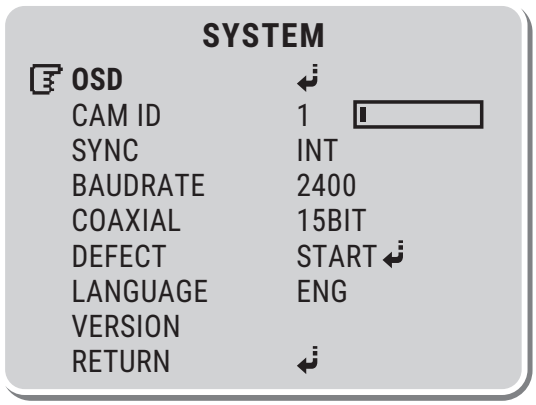


6. 9. SYSTEM

– Select **SYSTEM** using the UP or DOWN button and press the MENU button to activate **SYSTEM** mode.

6.9.1. OSD – On Screen Display

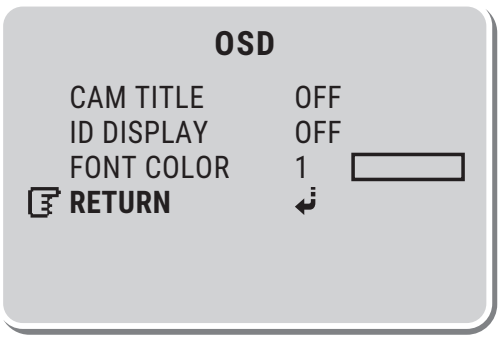
Select **OSD** using the UP or DOWN button and press the MENU button to activate the **OSD** mode.

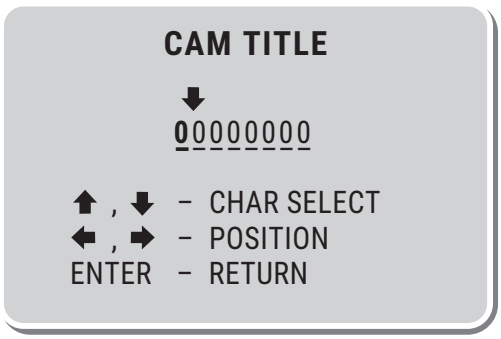


6.9.1.1. CAM TITLE

You can adjust **ON**, **OFF** using the LEFT or RIGHT button.
Select **ON** and press the MENU button to activate **CAM TITLE** option.

- **ON:** To display the camera title in the upper left-hand corner on the screen.
- **OFF:** Disable





- ⬆ , ⬇ **:** To select character using the up or down button. (0 ~ 9, A ~ Z)
- ⬅ , ➡ **:** To select position using the LEFT or RIGHT button.
- **ENTER:** You can return to using the MENU button.

6.9.1.2. ID DISPLAY

Camera **ID DISPLAY** on the screen.
You can select between **ON**, **OFF** using the LEFT or RIGHT button.

- **ON:** To display camera **ID** in the upper right-hand corner on the screen.
- **OFF:** Disable

6.9.1.3. FONT COLOR

Font colors that appear on the screen.
You can adjust the **FONT COLOR** from **1 ~ 8** using the LEFT or RIGHT button.

6.9.2. CAM ID – CAMERA ID (RS-485 Communication ID)

You can select between the range **000 ~ 255** using the LEFT or RIGHT button.

- **NOTE:** When the **INITIAL** is set, the **CAM ID** is remained previous selected **CAM ID**.

6.9.3. SYNC

➲ **INT**

Internal Synchronization Type.

6.9.4. BAUDRATE – To set the communication speed (bps)

You can select between **2400**, **4800**, **9600**, **57600**, **115200** using the LEFT or RIGHT button.

- **NOTE:** Pelco-D compatible **PROTOCOL**.
- **NOTE:** When the **INITIAL** is set, the **BAUDRATE** is remained previous selected **BAUDRATE**.

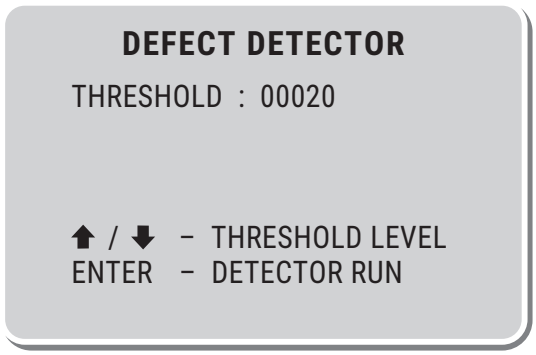
6.9.5. COAXIAL

Coaxial communication methods are supported.

- **NOTE:** [**PROTOCOL**] Pelco Coaxitron

6.9.6. DEFECT (Pixel defect compensation)

You can select **DEFECT** using the MENU button.



➲ **THRESHOLD**

The smaller the value, the smaller the pixels to detection and compensation. The reference value is set to **00020**.

6.9.7. LANGUAGE – To set the OSD is complimented by 16 languages.

You can change between **ENGLISH, SPANISH, FRENCH, ITALIAN, GERMAN, RUSSIAN, TURKISH, POLISH, PORTUGUESE, CZECH, HUNGARIAN, GREEK, KOREAN, JAPANESE, CHINESE1** or **CHINESE2** using the LEFT or RIGHT button.

6.9.8. VERSION – Camera Software History ..

6. 10. EXIT

– Select **EXIT** using the UP or DOWN button.
  You can exit out from the OSD MENU by selecting menu button.

6.10.1. SAVE

Change item is saved automatically when you change a menu.

6.10.2. PRESET – In the state of the EXIT, press menu button exit.

Located in the exit menu the menu cursor, if you press the left/right keys, reset is displayed.

Press for more than 1 second the key.
It will be preset after **PUSHING** display.

RETURN Select **RETURN** using the UP or DOWN button.
And press the MENU button.

7. Troubleshooting

7. 1. Resolving problems

The following table is intended to help identify the causes of malfunctions and correct them where possible.

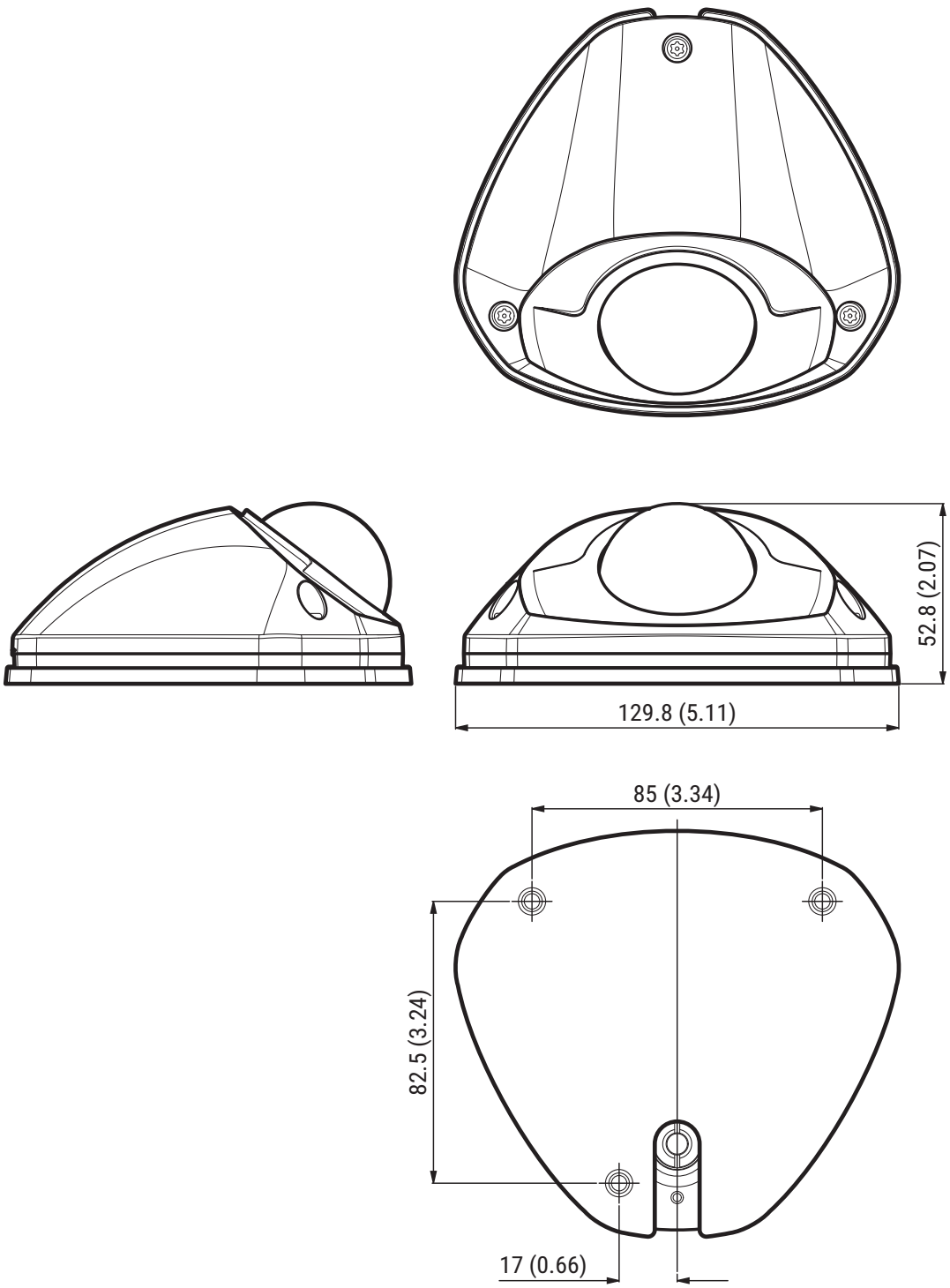
Malfunction	Solution
No image on screen.	Check that the power cord and line connection between the camera and monitor are fixed properly.
	Check that you have properly connected VIDEO cable to the camera VIDEO output jack.
The image on the screen is dim.	Is lens stained with dirt? Clean your lens with soft, clean cloth.
	Ensure the monitor is set up correctly.
	If the camera is exposed to strong light, change its position.
	Adjust the focus.
The image on the screen is dark.	Adjust the contrast of the monitor.
	If you have an intermediate device, set the 75 Ohm / Hi-z correctly.
The camera is not working properly, and its surface is hot.	Check that you have properly connected the camera to an appropriate power source.
The image on the screen flickers.	Check whether the camera is exposed to strong sunlight or fluorescent lighting.

8. Technical Data

8. 1. Specifications

MODEL	HINT81H
Signal System	NTSC
Effective Pixels	976 (H) x 494 (V)
ESC	1/60 ~ 1/120,000
Manual Shutter	1/60, 1/120, 1/250, 1/500, 1/700, 1/1K, 1/1.6K, 1/2.5K, 1/5K, 1/7K, 1/10K, 1/30K, 1/60K, 1/120K
Image Sensor	1/3 inch High Sensitivity CCD
SPECO DNR	OFF, LOW, MIDDLE, HIGH
Intensify	OFF, X2, X4, X8, X16, X32, X64, X128, X256, X512
Min Illumination F1.2, 30 IRE, ICR B/W	INTENSIFIER (X32) : Color 0.005 Lux
Video Output	1.0Vp-p Composite Signal (75 ohms)
Sync. System	Internal Sync
S/N Ratio	52dB Min (Sharpness, AGC Off)
Horizontal Resolution	More 700 TV Lines
White Balance	ATW/ PUSH/ MANUAL
D-WDR or DEFOG	OFF, LOW, MIDDLE, HIGH
BLC or HLC	OFF, LOW, MIDDLE, HIGH
AGC	0 ~ 20
Day & Night	AUTO, DAY, NIGHT, EXTERN, IRED
Burst	OFF, ON
Motion Detection	OFF, ON (4 programmable areas)
Privacy	OFF, ON (8 Programmable masks)
Mirror	OFF, ON (Horizontal)
Sharpness	0 ~ 20
Gamma	0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70
Applicable Lens	Fixed Lens (f=3.6mm, F1.8)
Coaxial Communication	Supports Pelco-C
OSD Language 16 Languages	ENGLISH, KOREAN, JAPANESE, CHINESE1, CHINESE2, SPANISH, GERMAN, FRENCH, POLISH, ITALIAN, PORTUGUESE, CZECH, RUSSIAN, TURKISH, HUNGARIAN, GREEK
Supply Voltage	24V AC (±20%) / 12V DC (±10%)
Power Consumption	180mA, 2.2W (Max) / 150mA, 1.8W (Max)
Operating Temperature / Humidity	–10°C to +50°C (14°F to 122°F) / 30% ~ 80% RH
Storage Temperature / Humidity	–20°C to +60°C (–4°F to 140°F) / 20% ~ 90% RH
IP	IP66
Dimensions(WxHxD)	129.8 (5.11") x 52.8 (2.07") x 118.8mm (4.67")

8. 2. Dimensions



mm (inch)

Design and specifications are
subject to change without notice.